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NOTES ON GEOGRAPHIC DISTRIBUTION

Amphibia, Anura, Leiuperidae, *Physalaemus soaresi* Izecksohn, 1965: New record, distribution extension and geographic distribution map

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ABSTRACT: We report a female *Physalaemus soaresi* Izecksohn, 1965 collected at the Atlantic rainforest of Serra do Mendanha, municipality of Rio de Janeiro, state of Rio de Janeiro, southeastern Brazil. Known only from two localities (and probably extinct in one), *P. soaresi* is considered a threatened species in Brazil and presumably threatened in the state of Rio de Janeiro. Despite the new record, *P. soaresi* still fits into the status of endangered and requires the full protection of all areas where it occurs.

The genus *Physalaemus* Fitzinger, 1826, currently consists of 43 recognized species of terrestrial frogs distributed from southern Mexico to northern Argentina (Cruz and Pimenta 2004; Nascimento, Caramaschi and Cruz 2005; Frost 2009). *Physalaemus soaresi* Izecksohn, 1965 was originally described from Horto Florestal de Santa Cruz (22°43'30" S, 43°43'10" W) (Izecksohn 1965; Izecksohn 1971) (now Floresta Nacional Mário Xavier), municipality of Seropédica, state of Rio de Janeiro, Brazil. There is also a single collection record of 12 specimens in March 1943 from Barro Branco (22°37' S, 43°15' W), municipality of Duque de Caxias, also in state of Rio de Janeiro (Izecksohn and Carvalho-e-Silva 2001a). These specimens are housed at the amphibian collection of the Museu Nacional, Rio de Janeiro under the numbers MNRJ 17837-48, collected by A. Passarelli. Despite being a commercial collector, his record is treated as reliable (Pombal Jr, personal communication). Both localities of occurrence are in regions of lowlands, and the second one, because of the current high level of urbanization and degradation of natural environments probably does not harbor the species anymore (Izecksohn and Carvalho-e-Silva 2008). In this note, we present the second confirmed record of *Physalaemus soaresi* outside of its type locality and discuss the distribution of the species (Figure 1).

An anurofaunal survey that has being carried out since August 2006 at the Atlantic rainforest of the Serra do Mendanha (22°48' - 22°51' S and 43°31'- 43°28' W, SAD 69), municipality of Rio de Janeiro, state of Rio de Janeiro, southeastern Brazil. The region is included within the Atlantic forest biome and is presently covered with forests with a relatively low level of anthropic disturbances, secondary forests at different states of regeneration and monoculture. The climate of the area is wet and warm with a relatively dry winter and a rainy summer (Pontes and Rocha 2008; Pontes *et al.* 2009). The mean annual temperature in the area varies from 18 to 24 °C and mean annual rainfall averages 1,200 - 2,000 mm, with the period from September to March being the rainiest (CLINO 1996; Nimer 1989; Pontes and Rocha 2008). For sampling amphibians in the area (authorization for scientific activities IBAMA 20385-1 and SMAC/GUC 07/2009) we used pitfall systems composed of a set of four 100 liter containers placed ten meters apart from each other along a straight line. At each environment type (undisturbed forest, secondary forest and banana plantation), 12 containers were settled, totaling 36 containers for the whole area. The containers of each pitfall system were interconnected with drift fences, totaling 50 m of drift fences for each system. The systems remained open during 24 hours in intermittent weeks, from August 2008 to September 2009 (5,040 hours/containers). Each pitfall trap was checked every two days throughout the week. Previously, from December 2002 to May 2004, Pontes *et*

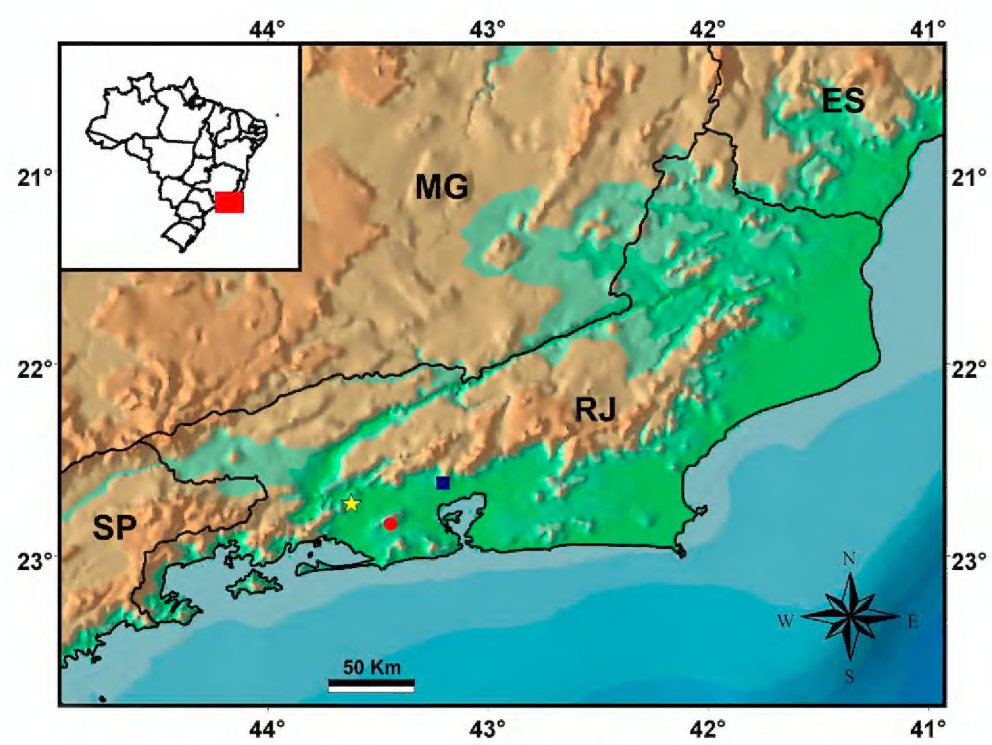

FIGURE 1. Geographic distribution of *Physalaemus soaresi* Izecksohn, 1965. Yellow star – Floresta Nacional Mario Xavier (type-locality). Blue square – Barro Branco, Duque de Caxias (collection record) and red dot – Serra do Mendanha (new record).

al. (2009) conducted a study about the snake community in the same area, using a pitfall system with 36 containers (13,000 hours/containers, approximately). In that study were collected specimens of different amphibian species currently housed at Museu Nacional, Rio de Janeiro. However, *P. soaresi* was not registered.

On 26 September 2009 we collected in a pitfall trap at 130 m above sea level in the secondary forest (22°49' 57.6" S, 43°30'00.1" W, SAD 69) a female *P. soaresi* (SVL = 22.2 mm, body mass = 1.05 g) with vitellogenic eggs (Figure 2). The specimen is currently housed at the amphibian collection of the Museu Nacional, Rio de Janeiro under the number MNRJ 60323.

It was suggested that *P. soaresi* could have originally been an undescribed species which might have been introduced in state of Rio de Janeiro, along with cultivated plants coming from other states, and would have then found an auspicious environment and established (Izecksohn and Carvalho-e-Silva 2001a). However, there is no record

Figure 2. *Physalaemus soaresi* Izecksohn, 1965 (MNRJ 60323), female collected at Serra do Mendanha, municipality of Rio de Janeiro, state of Rio de Janeiro, Brazil. Photo by J.A.L. Pontes.

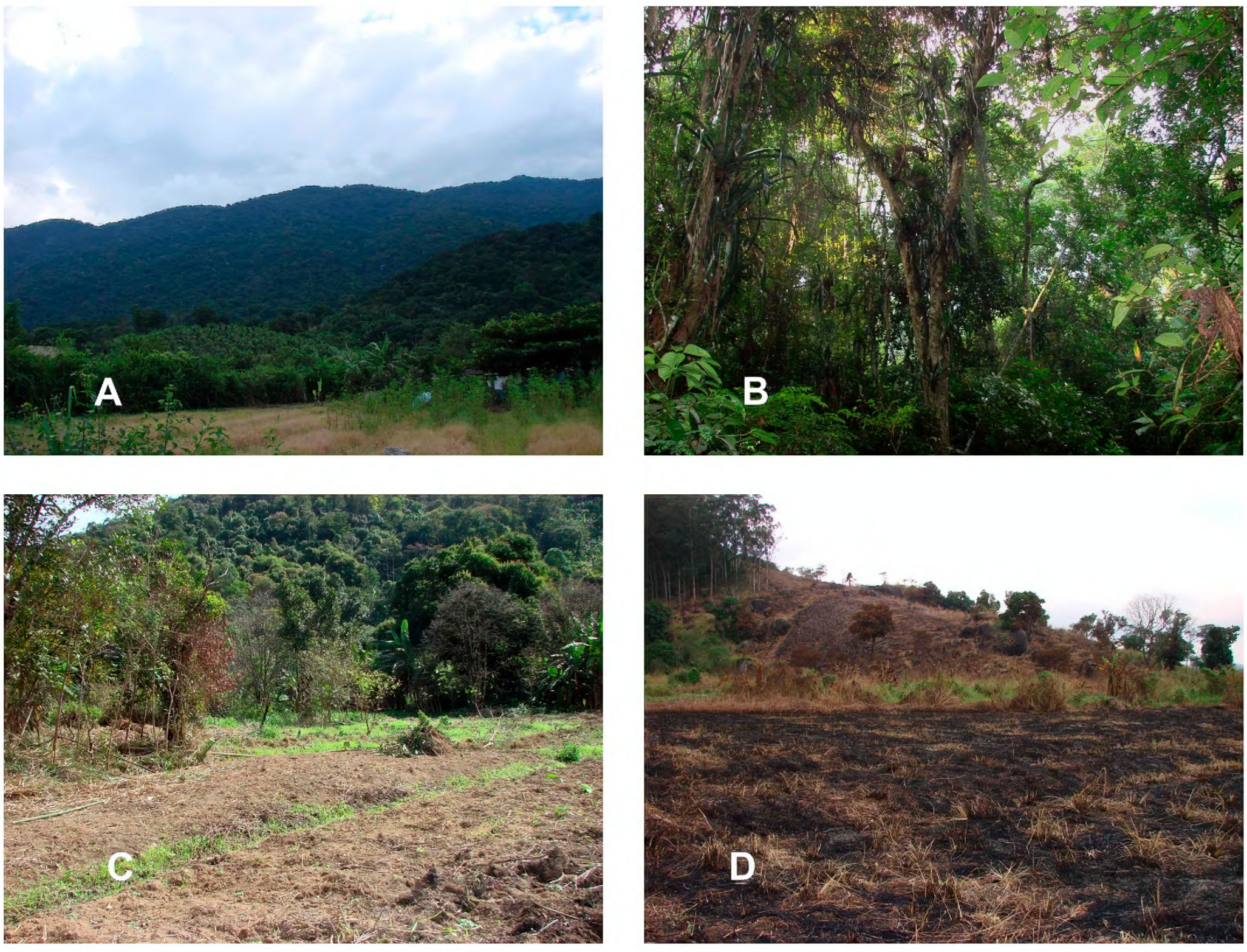

Figure 3. View of Serra do Mendanha (A). Lower land forest, habitat of *P. soaresi* (B). Antropic impacts by irregular human occupation in the Serra do Mendanha, especially for agriculture (C), and by the effects of fire (D). State of Rio de Janeiro, Brazil. Photos by J.A.L. Pontes.

of its occurrence outside state of Rio de Janeiro that could support this idea. Moreover, it is possible that *P. soaresi* originally inhabited lowland forests of Rio de Janeiro, which today are almost completely destroyed by sprawl. The present record for the Serra do Mendanha is the second confirmed record for the species in a different area from the type locality and the first record for municipality of Rio de Janeiro (Izecksohn and Carvalho-e-Silva 2001b).

Additionally, the occurrence of *P. soaresi* in the forests of Serra do Mendanha reinforces the idea that the species is indeed native to the state of Rio de Janeiro. The record of the species in the Serra do Mendanha complements a portion of its range between the only two previously known sites of occurrence in Seropédica and Duque de Caxias municipalities (Figure 1).

The new area where the species was recorded is partially inserted in a protected area, the Parque Natural Municipal da Serra do Mendanha. However, the lower portions of the area, where the species probably inhabits, are threatened by irregular human occupation, especially for agriculture, and by the effects of fire (Figures 3A, B, C and D).

According to the official national list (Haddad 2008), the southeastern region of Brazil has the largest number of amphibian species threatened with extinction in the country, (n = 15) and one species that is considered extinct (*Phrynomedusa fimbriata* Miranda-Ribeiro, 1923). The major cause of population decline has been deforestation for human occupation (Haddad 2008; Van Sluys *et al.* 2009). The small frog *P. soaresi* is an endemic species of the state of Rio de Janeiro (Rocha *et al.* 2004; Haddad *et al.* 2008; present study), and is included in the official list of threatened species at the national level (Haddad , 2008) and as "presumably threatened" at the state level (Caramaschi *et al.* 2000).

Considering that the specimen found was a female, we can infer that the area of Mendanha may constitute another potential reproductive site for the species. We have no data regarding the density of the *P. soaresi* population in the Serra do Mendanha. However, the needed effort to find a single individual indicates that the species may have low abundance in the area. Until now, the only known locality where the species maintain a viable population is the Horto Florestal de Santa Cruz (Izecksohn and Carvalho-e-Silva 2001a; Izecksohn and Carvalho-e-Silva 2008), now Floresta Nacional Mario Xavier. This location is currently under anthropic disturbance and loss of their original area due to the pressure of urban growth. Despite this new record, the species still fits into the status of endangered and requires the full protection of all areas where it occurs.

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